NOSOVITSKAYA, S.A. [Nosovyts'ka, S.A.]; BORZUNOV, Ye.Ye. [Borzunov, IE.IE.];
SAFIULIN, R.M.

Sodium carboxymethylcellulose as a binding agent in the preparation of tablets. Farmatsev.zhur. 17 no.4:6-8 '62. (MIRA 16:3)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut.
(CELLULOSE) (TABLETS (MEDICINE))

SAFIULIN, R.M.; NOSOVITSKAYA, S.A. [Nosovyts'ka, S.A.]; BORZUNOV, Ye.Ye.
[Borzunov, IE.IE.]

Kaolin as a disintegrator in the production of tablets. Farmatsev
zhur. 17 no.3:17-20 '62. (MIRA 17:10)

SAFIULINA, S.K.; ANAN'INA, N.V.; BLINOVA, N.Ye.

Dynamics of some biochemical indices in children during an interparoxysmal period of theumatic fever. Vop.okh.mat. i det. 8 no.2:22-27 F'63. (MIRA 16:7)

1. Iz kafedry fakul'tetskoy pediatrii (zav.- deystvitel'nyy chlen AMN SSSR zasluzhennyy deyatel' nauki prof. M.S.Maslov [deceased] Leningradskogo pediatricheskogo meditsinskogo instituta.

(RHEUMATIC FEVER) (BLOOD—ANALYSES AND CHEMISTRY)

SAFIULLINA, S. N., Master Med Sci --(diss) "The functional condition and nature of the reactive changes in the blood circulation of hypertension patients when treated by general galvanization (Russian: bromponogal'vanizatsiya)." Moscow, 1957, 18 pp. (Second Moscow State Med Inst im. N.I. Pirogova), 200 copies.

(KL, No 41, 1957, p.109)

SAFIULINA, S.N.

SAFIULINA, S.N.

Functional state and reactivity of the blood circulation system in hypertension during treatment with general bromogalvanization. Vop.kur., fizioter. i lech.fiz.kul't. 22 no.3:47-52 My-Je '57.
(MIRA 11:1)

1. Iz Nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniya RSFSR (dir. - prof. A.N.Obrosov)
(HYPERTENSION)
(BLOOD--CIRCULATION, DISORDERS OF)
(ELECTROLYSIS IN MEDICINE)

YASNOGORODSKIY, V.G.; STUDNITSYNA, L.A.; OLEFIRENKO, V.T.; SAFIULINA, S.N.;
NAZAROVA, I.N.

Treatment of hypertension patients with a ultrahigh-frequency electric pulse current. Vop. kur., fizioter. i lech. fiz. kul't. 25 no.2:114-119 Mr-Ap '60. (MIRA 13:9)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii v Moskve (dir. - kandidat meditsinskikh nauk G.N. Pospelova).

(ELECTROTHERAPEUTICS) (HYPERTENSION)

ZAKHAROVA, Ye.A.; NAZAROVA, I.N.; SAFIULINA, S.N.

Changes in central nervous system function and in the reactive properties of the peripheral vessels following treatment of hypertension patients with physical exercise and massage. Vop. kur., fizioter. i lech. fiz. kul't. 26 no. 2:143-150 Mr-Ap '61. (MIRA 14:4)

1. Iz Nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniya RSFSR (dir.-chlen-korrespondent AMN SSSR prof. A.N. Obrosov).

(HYPERTENSION) (NERVOUS SYSTEM) (EXERCISE THERAPY) (MASSAGE)

OBROSOV, A.N.; [illegible], L.A.; SAFIULINA, G.N.

Effect of microwaves on the cardiovascular system of a practically healthy person. Vop. kur. fizioter. i lech. fiz. kul't. 28 no.3: 223-229 My-Je '63. (MIRA 17:5)

1. Iz TSentral'nogo instituta kurortologii i fizioterapii (dir.-kand. med. nauk G.N. Pospelova).

SAFIULLIN, A.Z.

Teaching economic geography of the U.S.S.R. on the basis of regional study. Geog.v shkole 24 no.3:21-24 My-Je '61. (MIRA 14:5)

1. Asekeyevskaya shkola Orenburgskoy oblasti.
(Orenburg Province--Economic geography--Study and teaching)

SAFIULLIN, Anvar Zakirovich; KONSHINA, V.A., red.; TYUTYUNNIK, S.G., red.kart; KREYS, I.G., tekhn.red.

[Studying one's native territory in the course on the economic geography of the U.S.S.R.; based on the example of Orenburg Province] Izuchenie svoei oblasti v kurse ekonomicheskoi geografii SSSR; na primere Orenburgskoi oblasti. Moskva, Uchpedgiz, 1963. 91 p. (MIRA 17:1)

1. Uchitel' geografii Asekeyevskoy sredney shkoly, Orenburgskoy oblasti (for Safiullin).

SAFIULLIN, A.Z.

Studying the topic "economic geography of our province (territory, A.S.S.R.)." Geog. v shkole 26 no.1:45-49 Ja-F '63. (MIRA 16:5)

1. Asekeyevskaya srednyaya shkola Orenburgskoy oblasti.
(Geography, Economic--Study and teaching)

AYUPOV, Kh.V., kand. veter. nauk; IVANOVSKIY, S.A., kand. veter. nauk;
SAFIULLIN, G.K.; VALIULLIN, S.M., veterinarnyy vrach;
UPORNIKOV, M.V., veterinarnyy vrach; FROLOV, V.P., zootekhnik

Veterinary helminthological evaluation of the year-round pen system of keeping sheep. Veterinariia 40 no.6:49-52 Je '63. (MIRA 17:1)

1. Bashkirskaya nauchno-proizvodstvennaya veterinarnaya laboratoriya (for Frolov). 2. Direktor Miyakinskogo sovkhoza Bashkirskoy ASSR (for Safiullin).

SAFIULLIN, Khusain Arslanovich; LARINA, L.M., redaktor; RAKOV, S.I.,
tekhnicheskiy redaktor.

[How we disseminate the experience of innovators] Kak my
rasprostraniaem opyt novatorov. [Moskva] Izd-vo VTsSPS
Profizdat, 1955. 78 p. [Microfilm] (MLRA 9:1)
(Petroleum engineering)

MIRONOV, D.M.; SAFIULLIN, Kh.A.

What were the results of using water instead of drilling mud. Neftianik 1 no.1:10-11 Ja '56. (MIRA 9:7)

1.Glavnyy inzhener kontory bureniya No.1 tresta Tuymazaburneft' (for Mironov).2.Nachal'nik planovogo otdela kontory bureniya No.1 tresta Tuymazaburneft' (for Safiullin).

(Oil well drilling fluids)

MAKHNOVSKIY, I., kand. sel'skokhoz. nauk; GUZEYEV, G., nauchnyy sotrudnik; GALINSKIY, V.; OCHERETENKO, Ye.; VOLGINA, T.; MULLIN, S.; SAFIULLIN, M., aspirant; BABASYAN, A.

Use of toxic chemicals. Zashch. rast. ot vred. i bol. 10 no.8:21-24 '65. (MIRA 18:11)

1. Sredneaziatskiy institut lesnogo khozyaystva, Tashkent (for Makhnovskiy, Guzeyev). 2. Zaveduyushchiy Kabardino-Balkarskoy toksikologicheskoy laboratoriyey, Nal'chik (for Galinskiy). 3. Zaveduyushchiy kafedroy zashchity rasteniy Kamenets-Podol'skogo sel'skokhozyaystvennogo instituta (for Ocheretenko). 4. Starshaya laborantka Kamenets-Podl'skogo sel'skokhozyaystvennogo instituta (for Volgina). 5. Nachal'nik Tatarskoy stantsii zashchity rasteniy (for Mullin). 6. Kazanskiy pedagogicheskiy institut (for Safiullin). 7. Zaveduyushchaya Irkutskoy toksikologicheskoy laboratoriyey Vsesoyuznogo nauchno-issledovatel'skogo instituta zashchity rasteniy, Irkutskaya oblast' (for Babasyan).

SAFIULLIN, M N

AID P - 3959

Subject	: USSR/Mining
Card 1/1	Pub. 78 - 4/27
Authors	: Safiullin, M. N. and V. P. Grabovich
Title	: Oil well drillings with sectional TS3-10" turbo-drills.
Periodical	: Neft. khoz., v. 33, #12, 9-11, D 1955
Abstract	: The author points out all the advantages of the new type of turbo-drill, the TS3-10", which can be operated with the previously used U8-3 pumps and the electric motor with 450-500 kw capacity. Tables.
Institution	: None
Submitted	: No date

BOGDANOV, Natfulla Khusnullovich; SAFIULLIN, Midkhat Nazifullich;
RUDAKOVA, L.A., red.; GAYFULLIN, F.G., tekhn.red.

[Dual borehole drilling in Bashkir oil fields] Burenie dvukhstvol'nykh skvazhin na promyslakh Bashkirii. Ufa, Bashkirskoe knizhnoe izd-vo, 1959. 68 p.
(MIRA 14:1)

(Bashkiria—Oil well drilling)

DAVLETBAYEV, Dalgat Shagimardanovich; RAKHMANGULOV, Tagir
Mudarisovich; SAFIULLIN, Midkhat Nazifullich;
SULTANOVA, R.T., red.

[Oil well cementing in the Shkapovo Oil Field] Opyt tsementirovki neftianykh skvazhin na Shkapovskom mestorozhdenii. Ufa, Bashkirskoe knizhnoe izd-vo, 1959. 77 p. (MIRA 18:1)

GEYMAN, M.A.; MEZHLUMOV, A.O.; MUSINOV, V.I.; SAFIULLIN, M.N.;
YUZBASHEV, G.S.

Using electrodrills and turbodrills in aeration drilling.
Neft. khoz. 39 no.4:21-24 Ap '61. (MIRA 14:6)
(Oil well drilling, Electric—Equipment and supplies)
(Turbodrills)

VLADIMIROV, K.A.; GAYVORONSKIY, A.A.; YUZBASHEV, G.S.; BAYKOV, A.M.;
SHANOVICH, L.P.; LOGVINOV, I.I.; IL'IN, N.G.; SAFIULLIN, M.N.

Effect of a cement ring on the capacity of casing strings to resist collapsing loads. Neft. khoz. 42 no.6:19-24 Je '64.
(MIRA 17:8)

L 33998-66 EWT(m)/EWP(j) WW/RM

ACC NR: AR6017237 SOURCE CODE: UR/0058/65/000/012/D036/D037

74
B

AUTHOR: Perelygin, I. S.; Safiullina, N. R.; Romanov, V. G.

TITLE: Manifestation of intermolecular interaction of HCl with acetonitrile[1] in the infrared spectrum

SOURCE: Ref. zh. Fizika, Abs. 12D306

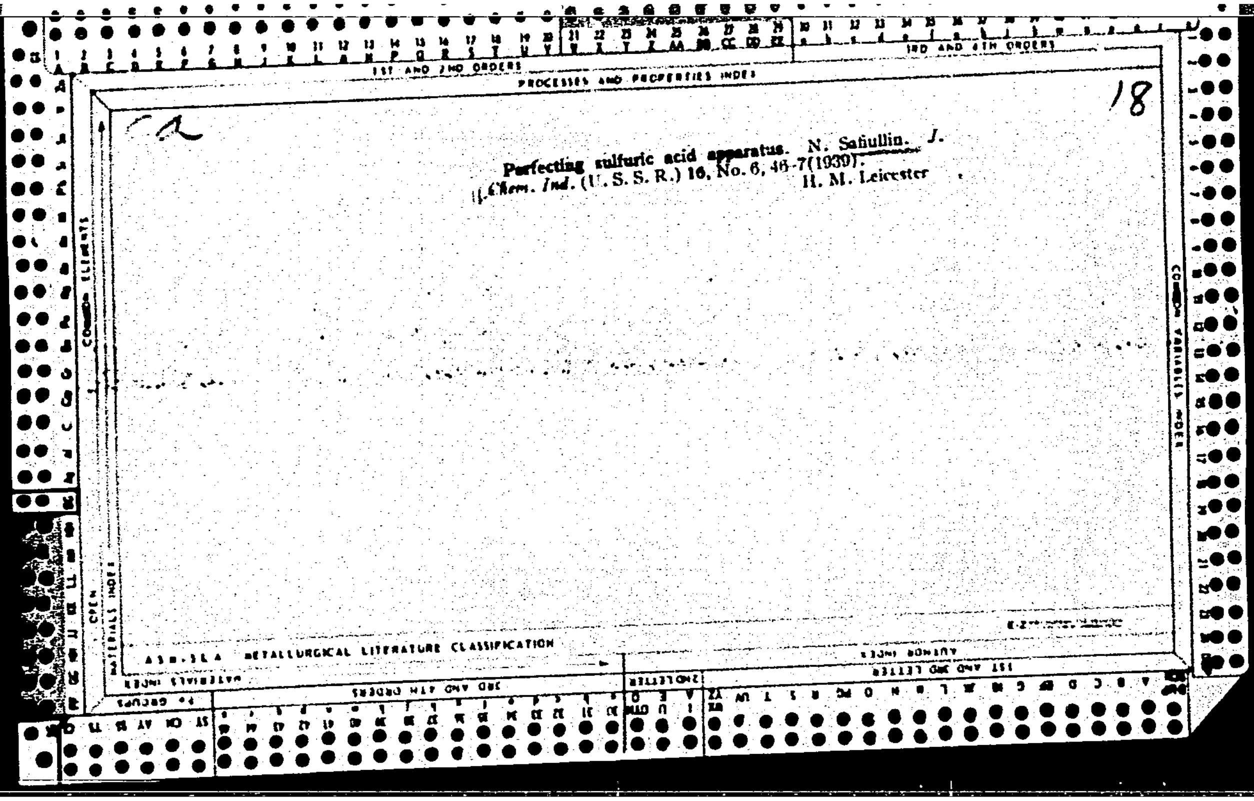
REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 158-163

TOPIC TAGS: ir spectrum, organic nitrile compound, chemical bonding, absorption band, frequency shift

ABSTRACT: A study was made of the infrared absorption band of the valence oscillations of the H-Cl, C≡N, C-C and C-H bonds in the following triple system: intert solvent + HCl + CH_3CN. It is established that the formation of the intermolecular bond[7] of hydrogen chloride with acetonitrile leads to a strong shift of the absorption band of the H-Cl bond toward lower frequencies, and to a shift of the absorption bands of the bonds C≡N and C-c toard higher frequencies. [Translation of abstract]

SUB CODE: 20, 07

Card 1/1


1ST AND 2ND ORDERS
3RD AND 4TH ORDERS
PROCESSES AND PROPERTIES INDEX
COMMON ELEMENTS
COMMON VARIABLES INDEX
MATERIALS INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION
AUTHOR INDEX
1ST AND 2ND LETTER
2ND LETTER
3RD AND 4TH ORDERS
MATERIALS INDEX

ca

18

Perfecting sulfuric acid apparatus. N. Safiullin. J. Chem. Ind. (U. S. S. R.) 16, No. 6, 46-7(1939).

H. M. Leicester

SAFIULLIN, N. Sh.

FD 176

USSR/Chemistry - Sulfuric Acid Production

Card 1/1

Author : Safiullin, N. Sh., Cand Tech Sci

Title : Production of magnetic pyrite cinder by the reduction of ferric oxide

Periodical : Khim. prom. 3, 46-49 (174-177), April-May 1954

Abstract : Investigated the reduction of ferric oxide to magnetic iron ~~oxide~~ with ferrous sulfide and with pyrite. Found that practically all of the iron of pyrite cinder can be obtained in the form of magnetic oxide if the cinder is calcined without access of air, provided that the sulfur content is no lower than 2.5%. If the sulfur content is lower than that, pyrite must be added. Oxidation of magnetic oxide at various temperatures in the range 150-500° was also studied. At 220° magnetic iron oxide is oxidized to gamma ferric oxide, which also has strong magnetic properties. Illustrated by 2 graphs. Data are listed in 4 tables. 2 USSR references are given.

SAFIULLIN, N. Sh. FD 177

USSR/Chemistry - Dust Masks

Card 1/1

Author :	Safiullin, N. Sh., Cand Tech Sci
Title :	Protection of respiratory organs from dust.
Periodical :	Khim. prom. 3, 49-50 (177-178), April-May 1954.
Abstract :	Describes several types of dust respirators to be used for protection against dust or dust combined with noxious gases (e.g. chlorine and sulfur dioxide), stating what models should be used in specific types of work. Illustrated by 5 figures. A chart for the selection of respirators is included in the text. No references are cited.

USSR/Chemistry - Sulfuric acid SAFIULLIN, N. SH. FD-2637

Card 1/1 Pub. 50-2/18

Authors : Safiullin, N. Sh., Cand Tech Sci; Olevinskiy, M. I., Chief Plant Engineer

Title : Decontamination of the waste gases of tower installations at sulfuric acid plants

Periodical : Khim. prom. No 3, 132-136, Apr-May 1955

Abstract : The use of a specially designed apparatus which consists of a scrubber and a polytubular Cottrell precipitator was found not only to purify the atmosphere, but also to reduce substantially the use of nitric acid and improve the yield of sulfuric acid. Oleum rather than tower acid is used in the scrubber. The oleum absorbs nitrogen oxides, forming an acid rich in nitrose which is recirculated into the first production tower. Three figures, 6 tables

Konstantinov Chemical Plant.

SAFIULLIN, N. Sh.

USSR/Chemistry - Analytical

FD-3012

Card 1/1 Pub. 50 - 13/17

Author : Safiullin, N. Sh.

Title : An accelerated method for the determination of barium

Periodical : Khim. prom. No 6, 364-365, Sep 1955

Abstract : In view of the fact that the determination of barium in barium sulfide by the barium sulfate method requires too much time, it is suggested that the following method be used in production control analyses. The barium sulfide melt is dissolved in hydrochloric acid, whereupon the barium is precipitated with potassium bichromate. The unused potassium bichromate which remains in the solution is reacted with potassium iodide and the iodine titrated with thiosulfate.

Institution : Central Plant Laboratory, Konstantinovsk Chemical Plant

06232
SOV/64-59-6-24/28

25(5)

AUTHOR: Safiullin, N. Sh.

TITLE: Detoxication of the Waste Gases of the Silicon Fluoride Department of the Superphosphate Industry by Means of an Electric Filter

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 6, pp 539 - 540 (USSR)

ABSTRACT: E. Liberman, G. Shchekina and L. Zhizhko participated in the experimental part of the present paper. Investigations of the absorption systems of the above-mentioned departments showed that the fluorine content of the waste gases appears as smoke of fluosilicic acid together with SiO_2, and not, as had been assumed, as silicon fluoride. An electric filter (Fig, scheme) for collecting this smoke was investigated. The waste gas was sucked through the electric filter by means of a vacuum pump at a rate of 0.5-1.0 m/sec. Two test series were carried out, the first with a normal fluorine content of the waste gas and a flow velocity of 0.5 m/sec (Table 1, results), the second with an increased fluorine content and the same flow velocity (Table 2). The experimental results obtained show that in both

Card 1/2

Detoxication of the Waste Gases of the Silicon Fluoride Department of the Superphosphate Industry by Means of an Electric Filter

06232
SOV/64-59-6-24/28

cases an average degree of purification of 98.8% was reached by means of the electric filter. In the case of a higher flow velocity (1.0 m/sec) a degree of purification of 96.1% was obtained. It is pointed out that the temperature of the waste gases prior to their introduction into the electric filter should not exceed 50° since the SiO_2 residue forming in the case of higher temperatures is hard to remove from the filter. There are 1 figure and 2 tables.

Card 2/2

5.4220,5.4200,5.4700

75659
SOV/80-32-10-8/51

AUTHOR: Safiullin, N. Sh.

TITLE: Reaction Between Ferrous Sulfides and Sulfate

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 10, pp 2178-2184 (USSR)

ABSTRACT: To study the above reaction, mixtures of technical FeS containing 68% FeS and 30% Fe_3O_4 and $FeSO_4 \cdot H_2O$, 99% pure, were roasted at 800° C under nitrogen. The SO_2 given off was absorbed by a 3% H_2O_2 solution and was determined by base titration. The character of the reaction was determined in each case on the basis of the gas and residue composition. Experiments showed that at $FeSO_4/FeS \leqslant 5$, reaction (1) takes place; with excess $FeSO_4$, (2) begins:

$$FeS + 5FeSO_4 = 2Fe_3O_4 + 6SO_2, \quad (1)$$

$$FeS + 7FeSO_4 = 4Fe_2O_3 + 8SO_2. \quad (2)$$

Card 1/5

Reaction Between Ferrous Sulfides and Sulfate

75659
SOV/80-32-10-8/51

Gibbs free energies and equilibrium constants were calculated for (1) and (2):

	900° K	1000° K	1100° K
ΔZ_1^0	-83700	-112100	-138900
ΔZ_2^0	-110800	-148300	-183800
K_1	$2.52 \cdot 10^{20}$	$3.16 \cdot 10^{24}$	$6.3 \cdot 10^{27}$
K_2	1.10^{27}	$2.52 \cdot 10^{32}$	$4.0 \cdot 10^{30}$

FeS containing 73.25% FeS and 5.64% FeS_2, prepared by thermal decomposition, at 800°, of pyrite, under nitrogen, was used to study the kinetics of (1) at 600, 700, and 800° C. The rate constant may be expressed by the equation:

$$K = K_0 e^{-\frac{E}{RT}} \qquad (D)$$

where E is the apparent energy of activation, the average value between 600 and 800° C is about 17,700

Card 2/5

cal. The reaction (3) between iron pyrite (42.4% sulfide sulfur and 0.45% sulfate sulfur) and $FeSO_4$

$$FeS_2 + 8\,FeSO_4 = 3Fe_3O_4 + 10\,SO_2, \qquad (3)$$

had the following ΔZ^0 and K:

	900° K	1000° K	1100° K
ΔZ^0_3	—130680	—179260	—225440
K_3	$6.3 \cdot 10^{31}$	$1.59 \cdot 10^{39}$	$6.3 \cdot 10^{44}$

The rate constant of (3) is expressed by (D); apparent energy of activation 12,700 cal. Addition of inert materials does not affect the rate of (3). Comparison of the rate of (3) with the rate of pure $FeSO_4$ decomposition under nitrogen indicates that the rate of (3) is more than five times as high. $Fe_2O(SO_4)_2$ was prepared by oxidation of $FeSO_4$ in air at 250° C to study the reaction of $Fe_2O(SO_4)_2$ and pyrite: pyrite was found to react at almost the same rate as with $FeSO_4$. With excess pyrite, reaction (4) is also probable:

$$FeS_2 + 3FeSO_4 = FeS + Fe_3O_4 + 4SO_2 \qquad (4)$$

This is explained by the high decomposition rate of pyrite at 600 to 800° C. Thermodynamic calculations indicate that $FeSO_4$ will react with S first, while

$$FeS_2 \rightarrow FeS + S$$

in the absence of excess $FeSO_4$, FeS will remain in the residue:

$$S + 3FeSO_4 = Fe_3O_4 + 4SO_2, \qquad (5)$$

$$2FeS_2 + FeSO_4 = 3FeS + 2SO_2. \qquad (6)$$

The probability of reactions (4) and (6) was confirmed by the material balance after roasting of a mixture

$FeS_2/FeSO_4$ = 1/3, and 2/1, respectively, at 800° C in nitrogen. Roasting of a $FeS/FeSO_4$ = 1/8 mixture in the absence of air, and of $FeS_2/FeSO_4$ = 1/8 in SO_2, both at 700° C, confirmed that pyrite oxidation by $FeSO_4$ can be used to produce 100% pure SO_2 at a high rate. This is of interest in connection with the theory of pyrite roasting, since iron sulfate in contact with FeS and FeS_2 is an intermediate product. There are 3 tables; 5 figures; and 12 references, 10 Soviet, 1 Czech, 1 U.S. The U.S. reference is: Kelley, K. K., Contributions to the Data on Theoretical Metallurgy, Bull. 476 (1949).

SUBMITTED: August 4, 1958

L 12671-63

ACCESSION NR: AP3000639 S/0080/63/036/003/0490/0495

AUTHOR: Safiullin, N. Sh.; Tseytlin, A. N.

44

TITLE: Absorption of nitric oxides by sulfuric acid

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 3, 1963, 490-495

TOPIC TAGS: nitric oxides, absorption

ABSTRACT: In the study of the effect of a number of factors on the speed of absorption of nitric oxides in sulfuric acid containing 0.15-0.20% NO·NO sub 2, it was found that the absorption of nitric oxides is noticeably increased as the concentration of sulfuric acid is increased to 85%. A further increase in the sulfuric acid concentration does not contribute to the speed of absorption. The increase of linear speed of gas by more than o.5 m/sec and the density of flow more than 6-7 m sup 3 / m sup 2 x hour does not change the speed of absorption of nitric oxides. When the nitration of concentrated sulfuric acid is increased from 0.0 to 4.4% HNO sub 3, the speed of absorption of nitric oxides is decreased only by 8%. The temperature of the apparatus shows a considerable effect on the speed of absorption of nitric oxides. The relative speeds of absorption of nitric oxides at the temperatures 18, 40 and 60C are 1:0.48:0.38 respectively. Original article has: 2 tables, 7 graphs, 2 figures.

Card 1/2

SAFIULLIN, N.Sh.

Kinetics of roasting of flotation iron pyrite in a fluidized bed. Zhur. prikl. khim. 38 no.1:34-43 Ja '65.

(MIRA 18:3)

ACC NR: AP6034659 (A) SOURCE CODE: UR/0436/66/000/003/0005/0008

AUTHOR: Safiullin, N. Sh.; Belyayev, E. K. (Candidate of Technical Sciences)

ORG: none

TITLE: Production of high-quality titanium dioxide from converted chromium-containing ilmenites by alkaline decomposition

SOURCE: Khimicheskaya promyshlennost' Ukrainy, no. 3, 1966, 5-8

TOPIC TAGS: titanium oxide, chromium oxide, iron oxide

ABSTRACT: In a study of alkaline decomposition of ilmenites containing Cr_2O_3, ilmenite concentrates mixed with sodium carbonate were subjected to oxidative roasting in order to convert the chromium and aluminum compounds to a water-soluble form and the iron compounds to an acid-soluble form. When small amounts (5-15%) of Na_2CO_3 are added, the latter is expended mainly on the formation of intermediate compounds during sintering, i. e., the Na_2O molecule penetrates into the crystal lattice of ilmenite to form new stable bonds. Larger amounts of Na_2CO_3 displace Fe_2O_3 from the intermediate compounds, forming sodium titanates. The optimum content of Na_2CO_3 (in pts. by wt.) in the charge is expressed by the general formula $Na_2CO_3 = 1.36\ Cr_2O_3 + 0.47\ TiO_2 + 0.96\ Al_2O_3 + 0.71\ SiO_2$. Introduction into the soda-ilmenite charge of the fluxes NaCl and a eutectic mixture of 69.50% Na_2SO_4 and 30.5% NaCl increases the degree of oxidation of Cr_2O_3 and the alkaline decomposition of ilmenite. Decomposition of the

UDC: 546.824

Card 1/2

ACC NR: AP6034659

sintered mass with 15-20% HCl at the temperature of hydrolysis of the titanium compounds produces high-quality titanium dioxide (95-97%) in the precipitate. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07/ SUBM DATE: none

Card 2/2

PETROV, G.N.; SAFIULLIN, R.A.

Methods for determining forest influences on maximum flood discharge. Izv. Kazan. fil. AN SSSR. Ser. energ. i vod. khoz. no.1:187-192 '57. (MIRA 11:10)

(Floods)

SAFIULLIN, R.A.

Some errors made in estimating the hydrological role of forests. Izv. Kazan. fil. AN SSSR. Ser. energ. i vod. khoz. no.2:45-56 '61. (MIRA 15:3)

(Forest influences) (Runoff)

GUZANOVA, M.A., meditsinskaya sestra; KUZNETSOV, S.M.; SIGAYEVA, A.N.
SAFIULLINA, A.K.; BLATOVA, N.A., starshaya meditsinskaya sestra;
LEBEDEVA, M.A.; FILIPPOV, V.V.; SOKOLOVA, V.I.; PLYUSNINA, P.K.

Nurses' councils. Med.sestra no.6:59-64 Je '62. (MIRA 15:8)

1. Predsedatel' Soveta meditsinskikh sester pri Tyumenskoy oblastnoy bol'nitse (for Guzanova). 2. Chlen Krayevogo komiteta profsoyuza meditsinskikh rabotnikov, Krasnodar (for Kuznetzov). 3. Predsedatel' Soveta meditsinskikh sester Leninogorskoy gorodskoy bol'nitsy Tatarskoy ASSR (for Sigayeva). 4. Zamestitel' glavnogo vracha po lechebnoy chasti Leninogorskoy gorodskoy bol'nitsy, Tatarskoy ASSR (for Safiullina). 5. Glavnyy vrach bol'nitsy No.6.g. Kamenska-Ural'skogo Sverdlovskoy oblasti (for Lebedeva).
(NURSES AND NURSING)

16,6870

S/044/62/000/008/044/073
C111/C222

AUTHORS: Kornishin, M.S., Safiullina, E.N.

TITLE: The application of successive approximations to the investigation of large bendings of a round plate and of a very flat spherical segment

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 30, abstract 8V156. ("Tr. Konferentsii po teorii plastin i obolochek, 1960". Kazan', 1961, 199-203)

VB

TEXT: The authors consider large bendings of a flat spherical segment under uniform shunt loading. It is stated that it is effective to connect the successive approximations with the extrapolation for the solutions of non-linear problems. In contrast to the general iteration method the convergence of the given method of successive approximations does not depend on the magnitude of the parameter of bending and on the boundary conditions. Here the extrapolation formula which gives values for the roots of the zero approximation, the error

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of which is smaller than 0.1%, plays an essential rôle. A table of the calculation results carried out on the computer "Strela" is given. The calculation was carried out for a round plate and a very flat spherical segment under uniformly distributed stress and under boundary conditions corresponding to the rigid, sliding and flexible clamping. In all cases the exactness $\varepsilon = 10^{-7}$ for 3-4 successive approximations was attained ; the solution of one problem required 20-25 minutes computer time for 16 values of bending in the center.
Bibliography : 4 titles.

[Abstracter's note : Complete translation.]

√B

PERELYGIN, I.S.; SAFIULLINA, N.R.; ROMANOV, V.G. (Kazan')

Study of the molecular interaction of acetonitrile with HCl based on infrared spectra. Zhur. fiz. khim. 39 no.2:394-397 F '65.
(MIRA 18:4)

1. Kazanskiy gosudarstvennyy universitet imeni Ul'yanova-Lenina.

KASHARSKIY, Engmar Grigor'yevich; SAFIULLINA, Roza Khalilovna; URUSOV, Izmail Dzhankhotovich; SUSHKOVA, T.I., red. izd-va; GALIGANOVA, L.M., tekhn. red.

[Theoretical and methodological problems concerning the design of a series of large synchronous machines]Nauchno-metodicheskie voprosy sozdaniia serii krupnykh sinkhronnykh mashin. Pod red. I.D.Urusova. Moskva, Izd-vo Akad. nauk SSSR, 1962. 153 p. (MIRA 15:12)

(Electric machinery, Synchronous)

URUSOV, I.D., doktor tekhn.nauk; SAFIULLINA, R.Kh., inzh.

Study of the slot geometry of a series of large synchronous machines using an electronic computers. Elektrichestvo no.2:35-42 F '63.
(MIRA 16:5)

(Electric motors, Synchronous) (Electronic computers)

L 58866-65 EPF(n)-2/EPA(s)-2/EWT(m)/EWP(b)/EWP(t) Pt-7/Pu-4 WW/JD/JG

ACCESSION NR: AP5014484 UR/0292/65/000/006/0014/0016
621.313.291.001.5

AUTHOR: Sukhanov, L. A. (Candidate of technical sciences); Bobkov, Yu. A. (Candidate of technical sciences); Safiullina, R. Kh. (Engineer) 28 B

TITLE: Calculation of liquid-metal current collection in unipolar machines

SOURCE: Elektrotekhnika, 36 no. 6, 1965, 14-16

TOPIC TAGS: unipolar machine, liquid metal current collection 18

ABSTRACT: Based on Western sources, a review is offered of the phenomena transpiring in and parameters of the liquid-metal (mercury) ring-type contact used for current collection in unipolar machines. Formation of undesirable layers between the liquid metal and the collector rings is due to chemical interactions and electrolytic processes. Electircal loss in the collector device and mechanical loss in the contact zone are estimated. As the friction loss decreases and the electrical loss increases with decreasing the contact-zone size, formulas and curves are developed for finding optimal size of this zone. Orig. art. has: 2 figures, 17 formulas, and 3 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: EE

NO REF SOV: 001 OTHER: 004

Card 1/1

L 14053-66 EWT(m)/EWP(w)/EPF(n)-2/T/EWP(t)/EWP(z)/EWP(b) IJP(c) JD/WW/HW/JG/
ACC NR: AT600057 DJ/GS SOURCE CODE: UR/0000/65/000/000/0267/0278

83 79
B+1

AUTHOR: Sukhanov, L. A.; Bobkov, Yu. A.; Safiullina, R. Kh.

ORG: none

44

TITLE: Current collectors with liquid metal contact for acyclic machines

18

SOURCE: AN SSSR. Institut elektromekhaniki. Elektricheskiye mashiny; issledovaniya, voprosy teorii i rascheta (Electrical machinery; research, problems in theory and design), Leningrad, Izd-vo Nauka, 1965, 267-278

TOPIC TAGS: electric generator, liquid metal, slip ring, direct current, electric engineering, friction loss

ABSTRACT: The author discusses various mechanical losses in homopolar dynamos with current collectors based on low-melting alloys. Current collector designs are divided into two basic categories: 1. the ring type in which the channel between the contact surfaces is completely filled with the liquid metal; 2. the jet type in which contact is made at individual points around the circumference by a thin pressurized jet of liquid metal. The advantages and disadvantages of each of these

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L 14053-66
ACC NR: AT6000057

4

types are discussed. Tests of a mercury jet contact show a resistance of less than 10^{-3} Ω for a linear rotor velocity of 150 m/sec, a current of 1000 amps and mechanical losses in the jet of about 750 w. The authors describe the centrifugal ring contact in horizontal and vertical homopolar machines. Electrical losses in this type of current collector are analyzed. Consideration is given to the formation of a contaminant layer by the interaction between the liquid metal and the surface of the current collector rings. Experimental data show an increase in equivalent resistance with time which differs for various metals. It is found that nickel is especially suitable for use in current collectors. Formulas are given for determining losses due to friction in the contact zone. The various formulas given for electrical and mechanical losses are used as a basis for deriving analytical expressions for selecting optimum dimensions of the contact zone. Orig. art. has: 4 figures, 4 tables, 22 formulas.

SUB CODE: 10/ SUBM DATE: 01Mar65/ ORIG REF: 002/ OTH REF: 007

BVK
Card 2/2

SAFIYAZOV, I.S.

Postirradiation regeneration of micro-organisms. Uzb. biol. zhur. 7 no.5:60-64 '63. (MIRA 18:11)

1. Institut botaniki AN UzSSR.

ACCESSION NR: AT4027402 S/3086/63/000/004/0118/0122

AUTHOR: Safiyazov, Zh.

TITLE: Effect of x-irradiation on the morphology of spore-forming bacteria

SOURCE: AN UzbSSR. Otd. biologicheskikh nauk. Voprosy* biologii i krayevoy meditsiny*, no. 4, 1963, 118-122

TOPIC TAGS: radiation, x-ray, bacterial morphology, bacterial radiosensitivity, sporogenous bacteria

ABSTRACT: Twenty-four-hour cultures of the vegetative cells of various spore-forming bacteria were exposed to various doses of x-irradiation, after which they were plated on meat-peptone agar and incubated for 24 hours at 34C. Colony counts on the following day showed that, at a dose of 6 kr, the cultures of B. megaterium No. 3, B. megaterium var. Mutiliate, and B. longissimus had survival rates of 53, 66, and 54% respectively. In cultures of B. subtilis 36 and 306, the survival rate at the same dose was 37.2 and 30%, respectively. With an increase in dosage up to 100 kr the survival rate decreased proportionally. The sublethal dose for all the cultures but one was 100 kr, which was lethal for B. subtilis 306. A dose of 150 kr was lethal for all the cultures. After a dose of 6-12.5 kr, cell division was retarded resulting in formation of giant cells. The author concludes that

ACCESSION NR: AT4027402

the radiosensitivity of the vegetative forms of spore-forming bacteria is about equal to that of their asporogenous strains. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Otdeleniye biologicheskikh nauk, AN UzbSSR (Division of Biological Sciences AN UzbSSR)

SUBMITTED: 00	DATE ACQ: 16Apr64	ENCL: 00
SUB CODE: LS	NO REF SOV: 003	OTHER: 002

Card 2/2

SAFIYAZOV, Zh.

Reactivation of sporeforming bacteria after exposure to gamma radiation. Dokl. AN Uz. SSR 20 no.1:52-54 '63. (MIRA 16:6)

1. Institut botaniki AN Uzbekskoy SSR. Predstavleno akademikom AN Uzbekskoy SSR A.M.Muzafarovym.

(Bacteria, Sporeforming)
(Gamma rays--Physiolgical effect)

SAFIYAZOV, Zh.; REMEZOVA, T.S.

Postradiation reactivation of germinating spores of Bacillus megaterium, Dokl. AN Uz. SSR 21 no. 11:61-64 '64
(MIRA 18:12)

1. Institut botaniki AN UzSSR. Submitted October 6, 1963.

SAFIYAZOV, Zh.

Survival of some soil sporebearing bacteria following irradiation. Uzb. biol. zhur. 8 no.5:11-13 '64 (MIRA 18:2)

1. Institut botaniki AN UzSSR.

SAFIYAZOV, Zh.

Study of the conditions of the reactivation of some asporogenous mutants in sporeforming bacteria. Uzb. biol. zhur. 8 no.6: 12-15 '64. (MIRA 18:3)

1. Institut botaniki AN UzSSR.

SAFIYAZOV, Zh.; EYDUS, L.Kh.

Radiation aftereffect phenomenon in irradiated Bacillus megaterium spores. Radiobiologiia 5 no.1:30-34 '65.

(MIRA 18:3)

1. Institut mikrobiologii AN SSSR i Institut biologicheskoy fiziki AN SSSR, Moskva.

ACC NR: AP7009127 SOURCE CODE: UR/0413/67/000/003/0115/0116

INVENTOR: Ibragimov, E. S.; Dozortsev, A. G.; Safiyev, N. I.

ORG: None

TITLE: A device for testing seals. Class 42, No. 191182 [announced by the Azerbaydzhan Scientific Research Institute of Petroleum Machinery (Azerbaydzhanskiy nauchno-issledovatel'skiy institut neftyanogo mashinostroyeniya)]

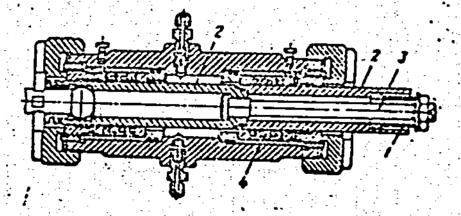
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1967, 115-116

TOPIC TAGS: turbine rotor, turbine stator, test facility, rotating seal

ABSTRACT: This Author's Certificate introduces a device for testing seals. The unit contains a cylinder which holds the seal to be tested and a hermetic seal. Inside the cylinder is a plunger which generates a pulsating fluid flow by reciprocating motion. Forces of friction in the seal to be tested are measured by using a calibrated sleeve to which strain gauges are cemented. The plunger is a composite unit made up of two elements with the ends connected by a tie bolt. This bolt bears against the end face of the calibrated sleeve which is mounted in the plunger element making contact with the seal to be tested.

Card 1/2 UDC: 620.165.29

ACC NR: AP7009127



1--calibrated sleeve; 2--composite plunger;
3--tie bolt; 4--seal to be tested

SUB CODE: ~~13, 14~~ 101 SUBM DATE: 15Nov65

Card 2/2

SAFOKHIN, Mikhail Samsonovich; KUPRIN, Aleksandr Ivanovich; SHOROKHOVA, A.V., otvetstvennyy red.; PROZOROVSKAYA, V.L., tekhn. red.

[Cutting and boring machinery] Sboechno-burovye mashiny. Moskva, Ugletekhizdat, 1958. 125 p. (MIRA 11:7)
(Mining machinery)

KATANOV, Boris Aleksandrovich; SAFOKHIN, Mikhail Samsonovich;
SHOROKHOVA, A.V., otv.red.; SHKLYAR, S.Ya., tekhn.red.

[Using rotary drilling rigs in coal beds] Stanki vrashchatel'nogo burenija na ugol'nykh razrezakh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 146 p. (MIRA 14:6)

(Coal mining machinery) (Rock drills)

SAFOKHIN, M.S.; KATANOV, B.A.

Testing the reamers of crosscutting and boring machines. Ugol' Ukr. 4 no. 11:35-36 N '60. (MIRA 13:12)
(Boring machinery--Testing)

SAFOKHIN, Mikhail Samsonovich; KATANOV, Boris Aleksandrovich; LYUBIMOV, N.G., otv. red.; BOLDYREVA, Z.A., tekhn. red.

[Operator of a drilling rig in an open pit] Mashinist burovogo stanka na kar'ere. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 249 p. (MIRA 15:2)
(Boring machinery) (Strip mining)

SAFOKHIN, M.S., inzh.; KATANOV, B.A., inzh.

Boring holes with steering wideners. Bezop.truda v prom. 5 no.1: 8-9 Ja '61. (MIRA 14:2)

(Boring)

SAFOKHIN, M.S., inzh.; KATANOV, B.A., kand.tekhn.nauk

Replaceable teeth for bits for auger-drilling of blastholes in open pits. Izv. vys. uch. zav.; gor. zhur. 5 no.6:106-108 '62. (MIRA 15:9)

1. Kemerovskiy gornyy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta.
(Boring machinery)

SAFOKHIN, Mikhail Samsonovich; KATANOV, Boris Aleksandrovich; LOGUNOV, Nikolay Fedorovich; BARKANOV, Yevgeniy Ivanovich; SOKOLOV, A.I., otv. red.; ABARBARCHUK, F.I., red. izd-va; MINSKER, L.I., tekhn. red.

[Crosscutting and boring machines and drill bits]Buro-sboechnye mashiny i burovoi instrument. [By] M.S.Safokhin i dr. Moskva, Gosgortekhizdat, 1962. 208 p. (MIRA 15:9)
(Boring machinery)

MURAV'YEV, Vasiliy Petrovich; DMITRIYEV, Gennadiy Andreyevich;
FILATOV, Mikhail Nikolayevich; SAFOKHIN, Mikhail Samsonovich;
GOL'DBERG, Leonid Abramovich; KRUT'KO, Mariya Vladimirovna;
NECHAYEV, Vadim Ivanovich; KOLCHANOV, Vitaliy Dmitriyevich;
BESSONOV, Yevgeniy Aleksandrovich; OBLOMSKIY, Ivan Yefimovich;
KORABLEV, A.A., otv. red.; ABRAMOV, V.I., red. izd-va;
PROZOROVSKAYA, V.L., tekhn. red.

[Automation in the coal mining industry] Avtomatizatsiia v ugol'noi promyshlennosti. [B] V.P.Murav'ev i dr. Moskva, Gosgortekhizdat, 1962. 258 p. (MIRA 15:10)
(Coal mines and mining) (Automation)

SAFOKHIN, M.S.

Results of tests of the drilling tool of crosscutting and boring machines in Kuznetsk Basin mines. Nauch. trudy Mosk. inst. radioelek. i gor. elektromekh. no.41:83-91 '62. (MIRA 16:10)

KATANOV, Boris Aleksandrovich; SAFOKHIN, Mikhail Samsonovich;
KUTUZOV, B.N., kand. tekhn. nauk, retsenzent; LYUBIMOV, N.G.,
otv. red.; OVSEYENKO, V.G., tekhn. red.; MAKSIMOVA, V.V., tekhn.red.

[Handbook for drill operators] Spravochnik mashinista burovogo stanka. Moskva, Gosgortekhizdat, 1963. 200 p. (MIRA 16:6)
(Boring machinery)

SAFOKHIN, M.S., starshiy prepodavatel'; KATANOV, B.A., dotsent, kand. tekhn. nauk

Results of testing the BGA-2 drill and drilling instrument. Sbor. nauch. trud. Kem. gor. inst. no.5:17-23 '64. (MIRA 18:3)

1. Gorno-elektromekhanicheskiy fakul'tet Kemerovskogo gornogo instituta.

KATANOV, B.A., dotsent, kand. tekhn. nauk; SAFOKHIN, M.S., starshiy prepodavatel'

Bits for auger drilling of abrasive rock. Sbor. nauch. trud. Kem. gor. inst. no.5:157-164 '64. (MIRA 18:3)

1. Gorno-elektromekhanicheskiy fakul'tet Kemerovskogo gornogo instituta.

KORSHUNOV, A.N., kand. tekhn. nauk, dotsent; SAFOKHIN, M.S., dotsent

Review of the book by A.V. Evnevich "Mine haulage machinery."
Ugol' 39 no.7:75-76 Jl '64. (MIRA 17:10)

1. Kemerovskiy gornyy institut.

KOROBANOVA, I.G.; KOVALEVA, A.P.; KOPYLOVA, A.K.; SAFOKHINA, I.A.

Alteration stages of the physicochemical properties of clay rocks. Trudy GIN no.115:124-142 '65. (MIRA 18:12)

SAFOKHINA, I.A.; PRIKLONSKIY, V.A. [deceased]

Some data on engineering and geological properties of spondylid clays from the Kiev region in connection with their history of formation and conditions of occurrence. Trudy Lab.gidrogeol. probl. 22:70-74 '59. (MIRA 13:4)
(Kiev region--Clay) (Soil mechanics)

GOR'KOVA, I.M., nauchnyy sotrudnik; KOROBANOVA, I.G., nauchnyy sotrudnik;
OKNINA, N.A., nauchnyy sotrudnik; REUTOVA, N.S., nauchnyy sotrudnik;
SAFOKHINA, I.A., nauchnyy sotrudnik; CHEPIK, V.F.. nauchnyy sotrudnik;
POPOV, I.V., doktor geol-mineral.nauk, otv.red.; SIMKINA, G.S.,
tekhn.red.

[Nature of stability and deformation characteristics of clay rocks in connection with conditions determining their formation and wetting] Priroda prochnosti i deformatsionnye osobennosti glinistykh porod v zavisimosti ot uslovii formirovaniia i uvlazhneniia. Moskva, Izd-vo Akad.nauk SSSR, 1961. 152 p. (Akademiia nauk SSSR. Laboratoriia gidrogeologicheskikh problem. Trudy, vol.29). (MIRA 14:6)

(Clay)

SAFOKHINA, I.A.

Conditions governing the formation of chalk and chalklike rocks in some regions of White Russia, the right bank of the Don, and the Lebedi deposit of the Kursk magnetic anomaly. Trudy Lab. gidrogeol.probl. 44:16-20 '62. (MIRA 15:7)
(Chalk)

SAFOKHINA, I.A.

Occurrences, physical state, and physicomechanical properties of chalk and chalklike rocks of districts studied. Trudy Lab. gidrogeol.probl. 44:21-30 '62. (MIRA 15:7)
(Chalk)

SAGOMONYAN, A.Ya.

Propagation of small-amplitude waves in soils. Nauch.dokl.vys.
shkoly; fiz.-mat.nauki no.3:138-142 '58. (MIRA 12:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Soil mechanics) (Elastic waves)

MILENINA, D.P.; RUDNEVSKIY, N.K.; SAFONEYEVA, T.M.

Intensity of aluminum and zinc lines in contact-pulse sampling of the Al-Zn alloy as dependent on concentration. Trudy po khim.i khim.tekh. no.1:8-11 '63. (MIRA 17:12)

USTIMENKO, V.F., starshiy dorozhnyy master; ZYKOV, F.M., starshiy dorozhnyy master; KIREY, P.I.; IVANITSKIY, M.V.; LOBANOV, Ye.I., dorozhnyy master; GAYDAR, P.R.; SIDOROV, B.N.; SAVKOV, Ye.I.; SAFONKIN, A.N.; PETROV, A.S.; BURLAK, F.V., inzh.

Letters to the editor. Put' i put.khoz. 5 no.5:42-44 My '61.
(MIRA 14:6)

1. Stantsiya Kupino,Omskoy dorogi (for Ustimenko). 2. Stantsiya Kotel'nich, Gor'kovskoy dorogi (for Zykov). 3. Stantsiya Petropavlovsk, Omskoy dorogi (for Kirey, Ivanitskiy). 4. Stantsiya Stupino, Moskovskoy dorogi (for Lobanov). 5. Zamestitel' nachal'nika distanstsii puti, st., Izyum, Donetskoy dorogi (for Gaydar). 6. Nachal'nik distantsii puti, st. Berlik, Kazakhskoy dorogi (for Sidorov). 7. Nachal'nik PMS-62, st. Nikitovka, Donetskoy dorogi (for Savkov). 8. Smennyy master shchebenochnogo kar'yera st. Chokpar, Kazakhskoy dorogi (for Safonkin). 9. Nachal'nik tekhnicheskogo otdela sluzhby puti, g. Yaroslavl' (for Petrov). 10. Distantsiya zashchitnykh lesonasazhdeniy, st. Artemovsk, Donetskoy dorogi (for Burlak).

(Railroads)

Safonnikov A.N.

Candidate of Technical Sciences

AUTHORS: Medovar, B.I., Safonnikov, A.N., and Lents, R.O., 125-58-6-2/14
Engineers

TITLE: Heat Resistance of Austenitic Seams, Welded Under Flux, in Argon and Carbon Dioxide (Zharoprochnost' austenitnykh shvov, svarennykh pod flyusom, v argone i uglekislom gaze)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 6, pp 13-31 (USSR)

ABSTRACT: The Institute of Electrowelding imeni Ye. O. Paton, AS UkrSSR, is investigating heat resistance of austenitic weld joints carried out by electric slag welding, electric arc welding under flux, and by gas-arc welding in argon or carbon dioxide. Information is presented on results of investigations, carried out on austenitic seams of Kh23N18 and 1Kh18N9T grade steels welded under low-silicate manganese AN-22 fluxes (17 - 20% SiO_2, 20 - 23 % Al_2O_3, 10 - 13% CaO, 12 - 15% MgO, 8 - 10% MnO, 22-26% CaF_2), under oxygenless fluorine ANF-5 fluxes (80% CaF_2, 20% NaF), in argon and carbon dioxide. Weld seams on chromo-nickel austenitic steel and chromo-nickel-titanium steel were subjected to tests. Chemical composition and microstructures of seams are given in tables and photographs. Carbide content in seams was investigated by Engineer G.P. Manzheley and N.A. Langer, Candidate of Technical Sciences. The following conclusions are given: 1) the type of welding process affects the

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125-58-6-2/14

Heat Resistance of Austenitic Seams, Welded Under Flux, in Argon and Carbon Dioxide

long-run resistance of 18-8 and 25-20 grade steels, regardless of similar initial materials (steel and electrode wire); 2) fluorine (oxygen-free) flux produces better heat-resistance of welds than low-silicon manganese fluxes; 3) in argon-arc welding of 25-20 type steel, the welds are of higher heat resistance than welds made with fluorine flux. In the case of welding 1Kh18N9T steel, the argon shielding has no advantage over flux welding; 4) the best heat resistance of welds in austenitic low-carbon steel is obtained by welding in carbon dioxide; 5) the better heat resistance of welds made in CO_2 is due to the higher carbon content of weld metal; 6) the best heat resistance of welds in CO_2 welding is obtained when the weld metal contains such elements as titanium, niobium, or molybdenum, which produce intensive carbide formation. In welding LKh18N9T steel with Sv-1Kh18N9T rods, a tenfold increase of long-run heat resistance was observed, as comparing to welds made under fluorine flux or in argon; 7) welding under flux can produce the same or even higher heat resistance than welding in CO_2, when there is a cor-

Card 2/3

125-58-6-2/14

Heat Resistance of Austenitic Seams, Welded Under Flux, in Argon and Carbon Dioxide

responding increase of carbon content in the weld metal (up to 0.12 - 0.15% C); 8) no direct interdependence was revealed between heat resistance and the content of oxygen and non-metallic inclusions, as well as the composition, shape, and distribution of the inclusions; 9)further investigations of the effect of different factors on heat resistance are imperative. There are 12 tables, 6 figures, and 19 references, 11 of which are Soviet, 7 English, and 1 German.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR(Order of Labor "Red Banner" Institute of Electric Welding im. Ye. O. Paton, AS UkrSSR)

SUBMITTED: February 2, 1958
AVAILABLE: Library of Congress
Card 3/3 1. Seam welds-Heat resistance

SOV-125-58-2-2/11

AUTHORS: Medovar, B.I., Latash, Yu.V., and Safonnikov, A.N.

TITLE: Electric Slag Welding With Plate Electrodes of Chrome-Nickel Austenitic Steels and Heat-Resistant Alloys (Elektroshlakovaya svarka plastinchatym elektrodom khromonikelevykh austenitnykh staley i zharoprochnykh splavov)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 2, pp 9-19 (USSR)

ABSTRACT: The article presents experimental data on and discusses some metallurgical and technological peculiarities of electric-slag welding with plate electrodes and electric-conducting "AN-25" flux, proposed by G.S. Tyagun-Belous, used for welding short seams in austenitic steel and heat-resistant alloy rods with cross sections up to $30,000\ mm^2$. In developing the new method, it was stated that correlations exist between the physical-chemical properties of the slag and specific deficiencies of the weld joints in the form of unwelded portions. It was proved that the use of fluorine fluxes ensures complete passage of easy-oxidizing additions, such as aluminum, titanium and boron, from the base and electrode metal into the seam metal. Information includes technological recommendations for

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SOV-125-58-2-2/11

Electric Slag Welding With Plate Electrodes of Chrome-Nickel Austenitic Steels and Heat-Resistant Alloys

welding different grades of steels and alloys. (Table 2). There are 7 photos, 3 tables and 4 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: December 2, 1957

1. Steel--Welding

Card 2/2

AUTHORS: Medovar, B.I. and Safonnikov, A.N. SOV/125-58-12-5/13

TITLE: The Electric Slag Welding of Large Size,Large Cross Section Chrome-Nickel-Titanium Austenitic "1Kh18N9T" Grade Steel Rings (Elektroshlakovaya svarka krupnogabaritnykh kolets bol'shogo secheniya iz khromonikeletitanovoy austenitnoy stali 1Kh18N9T)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 12, pp 35-49 (USSR)

ABSTRACT: Information is given on technological and metallurgical problems in the automatic welding of large size "1Kh18N9T" steel rings of 200 x 200 mm used for work under low temperatures, an aggressive media, high temperatures and loads. For this purpose, the Institute of Electric Welding developed a technology of single-run electric slag welding of high alloy steel and alloy rings, including "1Kh18N9T" steel. Technological recommendations are given for electric slag welding of: 1) acid resistant rings, requiring the use of low carbon electrodes to ensure the necessary resistance to intercrystalline corrosion, which can also be obtained by local austenitization and stabilizing annealing; 2) high-toughness cold-resistant rings, which must either be subjected to hardening or have an increased nickel content in the seam (8 - 10 to 11 - 14%); 3) heat resistant rings, requiring the

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SOV/125-58-12-5/13

The Electric Slag Welding of Large Size, Large Cross Section Chrome-Nickel-Titanium Austenitic "1Kh18N9T" Grade Steel Rings

use of electrodes with a high carbon and titanium content, to ensure the durable strength of the weld metal. Electric slag welding with strip electrodes has considerable advantages over multi-run welding with flux, such as the possibility of using a.c. and of changing the gap between the edges over a wide range. The following personalities participated in developing the new technology: Engineers I.N. Gerasimenko, A.G. Fomin, V.A. Smirnov, Ye.P. Rogozhkin, L.S. Surikov, N.A. Aksenov, A.V. Shavkunov and Technician L.I. Belyavtsev. There are 8 sets of photos, 3 diagrams, 7 tables, 1 graph, and 10 references, 9 of which are Soviet and 1 Polish.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton)

SUBMITTED: October 2, 1958

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Safonnikov, A.N.

25(1) PHASE I BOOK EXPLOITATION SOV/5421

Akademiya nauk URSR, Kiyev, Institut elektrosvarki imeni akademika Ye.O. Patona

Vnedreniye novykh sposobov svarki v promyshlennost', vyp. 2 (Introduction of New Welding Methods in Industry; Collection of Articles, No. 2) Kiyev, Gos. izd-vo tekhn. lit-ry Ukrainskoy SSR, 1959. 194 p. Errata slip inserted. 3,000 copies printed.

Ed.: V. Gartnaba; Tech. Ed.: S. Matusevich.

PURPOSE: This book is intended for workers in the welding industry.

COVERAGE: The book contains a discussion of welding techniques and problems by
groups of scientists and welders. Much attention is given to problems in the
application of new methods of mechanized welding and electro-slag welding.
This is the second collection of articles under the same title prepared and
published by the Institut elektrosvarki imeni Ye.O. Patona (Institute of
Electric Welding imeni Ye.O. Paton). The preface is written by B.Ye. Paton,
Academician of the Ukrainian Academy of Sciences and Winner of the Lenin Prize.
There are no references.

There are no references. Yu. A. Sterenbogen (Candidate of Technical
Iskra, A. S. (Engineer), Yu. A. Sterenbogen (Candidate of Technical
Sciences], V. M. Khrundzhe (Engineer; Institut elektrosvarki imeni
Ye.O. Patona (Electric Welding Institute imeni Ye.O. Paton)], D. P.
Antonets (Engineer, Zhdanovskiy zavod imeni Il'icha (Plant imeni
Il'ich in Zhdanov), V. I. Rabinovich (Engineer; Barnaul'skiy kotel'nyy
zavod (Barnaul Boiler Plant)], and V. V. Chernykh (Engineer; Novo-
Kramatorskiy mashinostroitel'nyy zavod (New Kramatorsk Machinery
Plant)]. Electro-slag Welding of Steel-plate Constructions 17

Iskra, A. S. (Senior Engineer], A. M. Makara (Candidate of Technical Sciences],
and L. V. Novikov (Senior Engineer; Institut elektrosvarki imeni Ye. O. Patona
(Electric Welding Institute imeni Ye. O. Paton)]. Making Bodies for Chemical
Equipment by Electro-slag Welding of Medium-alloyed Steel Forgings 32

Medovar, B. I. (Candidate of Technical Sciences], A. N. Safonnikov
(Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding
Institute imeni Ye. O. Paton)], and I. N. Gerasimenko (Head of Welding
Department; Podol'skiy mashinostroitel'nyy zavod imeni S. O. Ordz-
honikidze (Podol'sk Machinery Plant imeni S. O. Ordzhonikidze)]. Electro-
slag Welding of Large Flanges of 1Kh18N9T Austenitic Steel 51

Gurevich, S. M. (Candidate of Technical Sciences], V. P. Didkovskiy
(Engineer; S. D. Zagrebenyuk (Engineer; Institut elektrosvarki imeni
Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], P. S. Sinya-
pol'skiy (Head of Welding Office], and V. P. Shavyrev (Technologist of a
welding shop]. Electro-slag Automatic Arc Welding of Medium and Large
Thickness of Titanium 64

Pokhodnya, I. K. (Candidate of Technical Sciences], V. P. Subbotovskiy
(Senior Engineer], I. I. Frumin (Candidate of Technical Sciences; Institut
elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni
Ye. O. Paton)], L. A. Volkova (Shop Foreman; Dnepropetrovskiy metal-
lurgicheskiy zavod imeni G. I. Petrovskogo (Dnepropetrovsk Metallurgical
Plant imeni G. I. Petrovskiy)], V. P. Gorelov (Shop Superintendent;
Alchevskiy metallurgicheskiy zavod imeni K. Ye. Voroshilova (Alchevsk
Metallurgical Plant imeni K. Ye. Voroshilov)], and N. A. Ryzhenko,
(Chief Mechanic, Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk
Metallurgical Combine)]. Introduction of Automatic Hard-surfacing in
the Metallurgical Industry 74

Lashkevich, R. I., (Candidate of Technical Sciences], S. L. Mandel'-
berg (Candidate of Technical Sciences; Institut elektrosvarki imeni
Ye. O. Patona (Electric Welding Institut imeni Ye. O. Paton)]
Z. O. Knyazhinskiy (Candidate of Technical Sciences; Ukrainskiy nauchno-
issledovatel'skiy trubnyy institut (Ukrainian Scientific and Research
Institute of Pipes)], and S. A. Prikke (Chief Engineer; Chelyabinskiy
trubo-prokatnyy zavod (Chelyabinsk Pipe-rolling Plant)]. New Technique
in Straight-seam Welding of Large-diameter Oil and Gas Pipes 93

Gorbunov, G. V. (Engineer; Institut elektrosvarki imeni Ye. O. Patona
(Electric Welding Institute imeni Ye. O. Paton)], F. A. Zasko, (Chief
Engineer; Svarochno-montazhnyy trest (Welding and Assembling Trust)], and
A. N. Yuryshev (Chief of the Department of Gas Pipeline Construction;
Glavgaz SSSR (Main Administration of the Gas Industry of the USSR)]. Mech-
anized Methods of Welding in Pipeline Construction 108

Mayevskiy, G. V. (Candidate of Technical Sciences, Winner of Lenin
Prize; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding
Institute imeni Ye. O. Paton)], V. Ya. Mayevskiy (Chief Engineer;
Ukrglavneftesbyt (Ukrainian Main Administration for Petroleum Marketing)],
and Ye. F. Martinson (Head of Construction and Assembly Administration
No. 70; Trust 7, Ministerstvo stroitel'stva RSFSR (RSFSR Ministry of Con-
struction, Trust 7)]. Introduction of the Method for Weldments in the
Petroleum Industry 118

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SAFONNIKOV, A.N.

PHASE I BOOK EXPLOITATION SOV/3559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.M. Pavlov, and I.F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

Savitskiy, V.G., and K.V. Popov. Study of Certain Problems of the Temperature Dependence of the Plasticity of Steel From the Viewpoint of the Dislocation Theory 150

Gruzin, P.L., L.V. Pavlinov, A.D. Tyutyunnik (Deceased), and G.B. Fedorov Self-Diffusion in Chromium and Molybdenum 155

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Medovar, B.I., and A.N. Safonnikov. Metallurgical Problems in Electroslag Welding of Heat-Resisting Austenitic Steels and Nickel-Chromium-Base Alloys 220

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SAFONNIKOV, A.N.

SOV/125-59-9-5/16

18(5)

AUTHOR: Medovar, B.I.. Candidate of Technical Sciences, Safonnikov, A.N., Belkin, Ye.Ya., and Sharov, O.A., Engineers

TITLE: Electric Welding under Slag of Ageening Chrome-Nickel-Aluminum Stainless Steel

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 9, pp 33-44 (USSR)

ABSTRACT: Precipitation-hardening stainless steels, such as chrome-nickel austenitic steels possessing high plastic qualities, have a comparatively low strength limit; the latter property hampers their use, in cases where constructions must have a minimum weight at the maximum strength. Research has disclosed that the most efficient method to augment their strength is the creation of martensite in their structure. In the Soviet Union, the chrome-nickel-aluminum stainless steel, Type Kh 15N9Yu make SN-2 or EI904, is widely used. The transformation of austenite to martensite in steel SN-2 is realized by cold-treatment (4 hours at $-50^{\circ}C$ or 2 hours at $-79^{\circ}C$). This process leads to a considerable

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SOV/125-59-9-5-16

Electric Welding under Slag of Agening Chrome-Nickel-Aluminum Stainless Steel

chrome-nickel-aluminum steel SN-2 by means of a large section electrode made of the same steel does not eliminate the appearance of non-fused spots, if a fluoride flux with increased aluminum oxide contents is used. The negative influence of aluminum oxide can be entirely neutralized by introduction into the flux of a certain amount of silicon oxide or calcium oxide, separately or combined. There are 3 tables, 1 diagram, 6 photographs and 18 references, 9 of which are Soviet, 6 English, 1 French and 2 German.

ASSOCIATION: 1) Ordena trudovogo krasnogo znameni institut elektrosvarki imeni Ye.O.Patona AN USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O. Paton, AS Ukr SSR)(Medovar; Safonnikov);2) Moskovskiy sovnarkhoz (Moscow Sovnarkhoz) (Belkin; Sharov).

SUBMITTED: May 26, 1959

Card 3/3

18 (2, 3, 5) SOV/125-59-11-9/22

AUTHOR: Safonnikov, A.N., Engineer

TITLE: Experimental Use of Automatic Welder A-550 for Electroslag Welding with Lamellar Electrode

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 11, pp 61-64 (USSR)

ABSTRACT: The welder A-550 was developed by Engineer V.A. Lapchenko. Contributions to the introduction of the welder were also made by the following workers: I.N. Gerasimenko, A.G. Fomin, V.A. Smirnov, A.S. Nikishov, L.S. Rogozhkin, Ye.P. Surikov, V.G. Komarov, Ye.Ya. Belkin. O.A. Sharov, N.A. Aksenov, A.V. Shavkunov. The Institute of Electric Welding imeni Ye.O. Paton intends using this machine for welding large section (12 x 12 cm and more) steel pieces by applying lamellar electrodes. The welder is used in conjunction with the welding transformer, Type TShS-3000-1. The welder consists of the following main parts: Welding head, adjusting support, electrode holder, frame, and control board. The lamellar electrode feed speed varies from 0.8 to 17 m/hour de-

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Experimental Use of Automatic Welder A-550 for Electroslag Welding with Lamellar Electrode

pending on motor rotational speed (Fig 1). Welding fluxes are prepared on the basis of calcium fluoride with different physico-chemical properties. Problems of electroslag welding with lamellar electrodes are analyzed by the author and B.I. Medovar in a number of articles /Ref 1 to 5/. There are 1 graph, 4 figures and 5 Soviet references.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona AN USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O. Paton AS UkrSSR)

SUBMITTED: April 8, 1959

Card 2/2

25(1) SOV/125-59-12-12/18

AUTHORS: Medovar, B. I. and Safonnikov, A. N.

TITLE: Electric Slag Welding of Heat-Resistant Chrome Steels with a Plate Electrode

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 12, pp 80-82 (USSR)

ABSTRACT: The Institut elektrosvarki im. Ye. O. Patona AN UkrSSR (Electric Welding Institute Imeni Ye. O. Paton of the AS UkrSSR) has developed a method of electric slag welding with a plate electrode for heat-resistant chrome steels of the martensite grade, for forgings with 75 x 75 to 220 x 220 mm (steel EI961) and 30 x 30 to 80 x 120 mm (steel EI736) cross sections. Plates 12 to 22 mm thick of the same composition as the forgings were used as filler metal. The recommended welding conditions are given in the table. The method ensures the good quality of the welds, and the metal of the joints is solid, without cracks or pores, or other defects. After a corresponding heat treatment, depending on the grade of steel, the mechanical properties of the weld metal

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Electric Slag Welding of Heat-Resistant Chrome Steels with a Plate Electrode

are as good as those of the basic metal. In cases of especially large cross sections, e.g. 220 x 220 mm, of EI961 steel, a special method of welding should be used to avoid cold cracks. Details of the subject method are given. There are 2 photographs, 1 table and 1 diagram.

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SOV/125-12-2-1/14

18(5)

AUTHOR: Medovar, B.I., Safonnikov, A.N., and Lents, R.O.

TITLE: Heat Resistance of Welded Joints of the Nickel-Chrome Alloy Type Kh20N80T3Yu (EI437B) (Zharoprochnost' svarnykh soyedineniy nikelekhromovogo splava tipa Kh20N80T3Yu (EI437B)

PERIODICAL: Avtomaticheskaya Svarka, 1959, Vol 12, Nr 2, pp 3-19 (USSR)

ABSTRACT: It is shown that with automatic electro-arc and electric-bar welding of the alloy EI437B, using fluoride oxygen-free flux, a high degree of heat resistance of the welded joints is achieved: $\sigma \frac{sv}{dl} > 0.85 \div 0.90\ \sigma \frac{om}{dl}$ where sv is the welded joint, om the basemetal, and dl the length; $\sigma \frac{om}{dl}$, $\sigma \frac{sv}{dl}$ are the longitudinal strength of the basic metal and the welded joint respectively). Experimental data are quoted for the influence of the time of heating in the tempering process, and of riveting on the

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Heat Resistance of Welded Joints of the Nickel-Chrome Alloy Type Kh20N80T3Yu (EI437B)

longitudinal strength of welded joints. Nickel-chrome heat-resistant alloys are widely used in the manufacture of gas turbines. It is now necessary to weld forged or rolled parts made of heat-resistant alloys 100-200 mm thick. One such alloy is nickel-chrome, type Kh20N80, data for which are given. The hardening qualities of nickel-aluminum-titanium and boron are mentioned. After the USSR developed an oxygen-free fluoride flux, the same type appeared in the USA. The article gives data on the heat-resistance of welded joints of alloy EI437B, 12-20 mm thick, carried out by arc-welding with flux, and up to 100 mm thick carried out by the electric-bar method. A section deals with the heat-resistance of welded joints in alloy EI437B made by the arc method, and is followed by examination of joints of the same alloy welded by the electric-bar method. Engineer V.A. Smirnov took part in the compilation of this section. The important conclusions are that: when welding using flux of the alloy EI437B, 10-20 mm thick and wire EI437A,

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Heat Resistance of Welded Joints of the Nickel-Chrome Alloy Type Kh20N80T3Yu (EI437B)

the longitudinal strength of the welded joint is not less than 80-85% of the strength of the basic metal. Secondly electric-bar welding with a lamellated electrode of heat-resistant alloys on nickel-chrome base, using oxygen-free fluoride flux, gives a high degree of heat-resistance to the joints ($\sigma \frac{sv}{dl} = 0.9 \frac{om}{dl}$). For explanation of symbols, see above. Thirdly there is reason to think that a high degree of heat-resistance for welded joints of alloy EI437B up to 20 mm thick can be achieved even with some reduction of the length of heating during tempering. Preliminary riveting of welded joints before tempering leads to some increase in heat-resistance. There are 11 tables, 2 graphs, 7 drawings and 17 references, 10 of which are Soviet and 7 English.

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SOV/125-12-2-1/14

Heat Resistance of Welded Joints of the Nickel-Chrome Alloy Type Kh20N80T3Yu (EI437B)

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki imeni Ye.O.Patona **AN** USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O.Paton of the AS UkrSSR)

SUBMITTED: November 30, 1958

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SOV/125-12-2-13/14

18(5)

AUTHOR: Medovar, B.I., Safonnikov, A.N., and Puzrin, L.G.

TITLE: Automatic Welding of Chrome-Nickel Stable Austenite Steels, Using an Unprotected Arc (Avtomaticheskaya svarka nezashchishchennoy dugoy khromonikelevykh stabil'noaustenitnykh staley)

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 2, pp 94-95 (USSR)

ABSTRACT: Research by the Welding Institute has made it possible to perform automatic welding of these steels using a naked electrode and an unprotected arc. As an austenizer, nitrogen is 30 times stronger than nickel. As a result the joint may acquire a pure austenite structure and lose the necessary resistance to heat cracks and intercrystalline corrosion. Consequently it is not recommended that austenite steels of the type 18-8 should be welded with an unprotected arc. For welding the stable austenite steels 25-20, 15-35, 15-20 etc, wires are used which ensure single phase austenite welds or two-phase welds without

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Automatic Welding of Chrome-Nickel Stable Austenite Steels, Using an Unprotected Arc

ferrite. These wires have a reduced silicon content and very little sulphur or phosphorus. On the other hand they have increased concentrations of carbon and manganese. In welding stable austenite salts with wires of these types there is no need to fear the atmospheric oxygen or nitrogen. The nitrogen content of the weld is increased, for example, from 0.008 to 0.012%. Using an unprotected arc there is a sharp reduction in the hydrogen concentration in the weld. Hydrogen can cause heat cracks in pure austenite welds. Trials for prolonged strength (700°, 12 Kgs/mm^2) showed that samples welded with flux collapsed after 45-50 hours, whereas welded in air they lasted 360-370 hrs. Comparative durability tests on flat welded steel samples of EI417 1.5 mm thick were made. Welded using an argon arc and wire 2Kh25N15G7 1.5 mm in diameter, the samples collapsed after 46 hrs at 800° and 4 Kgs/mm^2. Air-welded samples in the same conditions lasted 230 hrs. The authors think that naked wire welding with an unprotected arc of stable austenite

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